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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/681,073	10/08/2003	Kazuaki Yazawa	450134-04839	8621

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EXAMINER
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DATSKOVSKIY, MICHAEL V

ART UNIT	PAPER NUMBER
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2835

DATE MAILED: 01/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/681,073

Applicant(s)

YAZAWA, KAZUAKI

Examiner

Michael V. Datskovskiy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 04/16/04; 10/08/03.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments with respect to claims 1-4, 9-10, 12-13 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-4, 6, 9-10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagy et al.

Nagy et al teach a heat dissipating structure, Fig. 1, for an electronic device, comprising: a heat source 27; and a heat dissipating member 11 having an inner wall 28, outer wall 53, and partition walls 14, wherein the inner wall indirectly receives heat from the heat source 10, the outer wall opposes the inner wall at a distance, the partition walls connect the inner wall and the outer wall, the inner wall, outer wall and partition walls define a plurality of through-holes 51, the through-holes are arranged along at least one of the inner wall and the outer wall, each of the through-holes extends in a vertical direction within a tilt range in which gravitational influence is utilizable, and top and bottom ends of each of the through-holes open to the outside.

Nagy et al teach furthermore: said plurality of through-holes are lined up along at least one of the inner wall and the outer wall at regular intervals; each of the through-holes is

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within 60 ° to a plumb line; and a cross-sectional shape of each of the through-holes that is orthogonal to the vertical direction is approximately the same at arbitrary vertical positions. Nagy et al teach also said through-holes 14 are lined up in a circle; said inner wall of the heat dissipating member defines an enclosed space and said heat source 27 is placed within the enclosed space. Nagy et al do not teach either that an optimum distance between opposing inner sides of two adjacent partition walls is set in accordance with a linear function of vertical length of the through-holes, and a distance between the opposing inner sides is set based upon the optimum distance, or an empiric formula of calculating an optimum distance between opposing inner sides of two adjacent partition walls in accordance with a linear function of vertical length of the through-holes. It would have been obvious to one ordinary skilled in the art at the time invention was made to calculate an optimum distance between opposing inner sides of two adjacent partition walls, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

4. Claims 1-4, 6, 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki (Japan Patent JP02001291982A).

Aoki teaches a heat dissipating structure, Figs. 1-7, for an electronic device, comprising: a heat source 6; and a heat dissipating member 2 having an inner wall 8, outer wall 9, and partition walls 10, wherein the inner wall directly receives heat from the heat source 6, the outer wall opposes the inner wall at a distance, the partition walls connect the inner wall and the outer wall, the inner wall, outer wall and partition walls define a

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plurality of through-holes, the through-holes are arranged along at least one of the inner wall and the outer wall, each of the through-holes extends in a vertical direction within a tilt range in which gravitational influence is utilizable, and top and bottom ends of each of the through-holes open to the outside. Aoki teaches furthermore: said plurality of through-holes have approximately the same square shape, and are lined up along at least one of the inner wall and the outer wall at regular intervals; each of the through-holes is within 60 ° to a plumb line; and a cross-sectional shape of each of the through-holes that is orthogonal to the vertical direction is approximately the same at arbitrary vertical positions. Aoki teaches also that: a cross-section that is vertically orthogonal to the approximately a square shape, and through-hole lengths of four sides of the cross-section of the through-hole are set almost equal, wherein the through-holes are approximately lined up linearly. Aoki does not teach that an optimum distance between opposing inner sides of two adjacent partition walls is set in accordance with a linear function of vertical length of the through-holes, and a distance between the opposing inner sides is set based upon the optimum distance. It would have been obvious to one ordinary skilled in the art at the time invention was made to calculate an optimum distance between opposing inner sides of two adjacent partition walls, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

5. Claims 1-4, 7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mottahed.

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Mottahed teaches a heat dissipating structure, Figs. 1-2, for an electronic device, comprising: a heat source 1; and a heat dissipating member 3 having an inner wall, outer wall 7, and partition walls 9, wherein the inner wall directly receives heat from the heat source 1, the outer wall opposes the inner wall at a distance, the partition walls connect the inner wall and the outer wall, the inner wall, outer wall and partition walls define a plurality of through-holes, the through-holes are arranged along at least one of the inner wall and the outer wall, each of the through-holes extends in a vertical direction within a tilt range in which gravitational influence is utilizable, and top and bottom ends of each of the through-holes open to the outside.

Mottahed teaches furthermore: said plurality of through-holes are lined up along at least one of the inner wall and the outer wall at regular intervals; each of the through-holes is within  $60^\circ$  to a plumb line; and a cross-sectional shape of each of the through-holes that is orthogonal to the vertical direction is approximately the same at arbitrary vertical positions. Mottahed teaches also a heat-diffusing member (col. 2, lines 48-54) positioned between the heat source and an outer side of inner wall of the heat-dissipating member. Mottahed does not teach that an optimum distance between opposing inner sides of two adjacent partition walls is set in accordance with a linear function of vertical length of the through-holes, and a distance between the opposing inner sides is set based upon the optimum distance. It would have been obvious to one ordinary skilled in the art at the time invention was made to calculate an optimum distance between opposing inner sides of two adjacent partition walls, since it has been held that where the general conditions of a claim are disclosed in the prior art,

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discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

6. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nagy et al as applied to claim 1 above, and further in view of Hanson (US Patent 4,095,998). Nagy et al teach all the limitations of the claims except an outer side of the heat-dissipating member has a cooling fin. Hanson teaches a cylindrical heat exchanger, Figs.1-2, wherein an outer side an outer wall 10 has a plurality of cooling fins 12. It would have been obvious to one ordinary skilled in the art at the time invention was made to employ fins positioned on the outer side of the outer wall of the heat dissipating member in the device by Nagy et al as it is shown by Hanson, in order to enhance heat dissipation.

***Allowable Subject Matter***

7. Claim 11 is allowed.

***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the


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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael V. Datskovskiy whose telephone number is (571) 272-2040. The examiner can normally be reached on 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynn Feild can be reached on (571) 272-2092. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Michael V Datskovskiy  
Primary Examiner  
Art Unit 2835

09/08/2005